CLAIMS

1. A titanium oxide produced through reaction between a titanium halide-containing gas and an oxidative gas, characterized in that the rutile content of the titanium oxide is 5% or less, and that the specific surface area of the titanium oxide as measured by means of a BET one-point method; i.e., B (m^2/g), and the halogen content of the titanium oxide; i.e., C (mass ppm), satisfy the following relation: $C \leq 650e^{0.02B}$, and in that, when an aqueous suspension containing the titanium oxide in an amount of 1 mass% is allowed to stand at 20°C for 30 minutes, the amount of halogen which is transferred from the titanium oxide to a liquid phase is at least 80 mass% on the basis of the entire amount of halogen contained in the titanium oxide.

2. A titanium oxide according to claim 1, wherein the amount of halogen which is transferred from the titanium oxide to a liquid phase is at least 90 mass% on the basis of the entire amount of halogen contained in the titanium oxide.

3. A titanium oxide according to claim 1 or 2, which comprises Fe in an amount of 100 mass ppm or less, Al in an amount of 100 mass ppm or less, Si in an amount of 100 mass ppm or less, and S in an amount of 100 mass ppm or less.

4. A titanium oxide according to any one of claims 1 through 3, which has a specific surface area of 10 to 200 m^2/g.

5. A titanium oxide according to any one of claims 1 through 4, which comprises anatase as a primary phase.

6. A titanium oxide according to claim 5, which has an anatase content of at least 90%.

7. A titanium oxide according to any one of claims 1 through 4, which comprises brookite as a primary phase.

8. A titanium oxide according to claim 7, which has a brookite content of at least 90%.

9. A titanium oxide according to any one of claims 1 through 8, which has a 90% cumulative mass particle size of 2.5 μm or less as measured by use of a laser diffraction particle size analyzer.

10. A titanium oxide according to any one of claims 1 through 9, wherein said titanium halogenide is titanium tetrachloride and said halogen is chlorine.

11. A vapor-phase process for producing a titanium oxide as recited in any one of claims 1 through 9 above, comprising reacting a titanium halogenide-containing gas with an oxidative gas, characterized in that, when the titanium halogenide-containing gas and the oxidative gas are introduced into a reactor, to thereby allow reaction to proceed, the temperature of the interior of the reactor is at least 800°C but less than 1,100°C.

12. A process for producing a titanium oxide according to claim 11, wherein the residence time of the titanium halogenide-containing gas and the oxidative gas in the reactor at temperature range of at least 800°C but less than 1100°C is 0.1 seconds or less.

13. A process for producing a titanium oxide according to claim 11 or 12, wherein each of the titanium halogenide-containing gas and the oxidative gas is preliminarily heated at a temperature of at least 600°C but less than 1,100°C before being introduced into the reactor.

14. A process for producing a titanium oxide according to any one of claims 11 through 13, wherein reaction is performed by use of a raw material gas mixture containing titanium halogenide and an inert gas at a ratio of 1 : 0.1 - 20 by mol, and also by use of an oxidative gas whose amount is 1 to 30 mol on the basis of 1 mol of the titanium halogenide.

15. A process for producing a titanium oxide according to any one of claims 11 through 14 above, wherein the oxidative gas is an oxygen gas containing

water steam.

16. A process for producing a titanium oxide according to claim 15, wherein the oxidative gas contains steam in an amount of at least 0.1 mol per 1 mol of an oxygen gas.

17. A process for producing a titanium oxide according to any one of claims 11 through 16, wherein said titanium halogenide is titanium tetrachloride.

18. A process for producing a titanium oxide characterized by comprising dehalogenating titanium oxide produced by the process as set forth in any one of claims 11 through 17 by means of a dry dehalogenation method.

19. A process for producing a titanium oxide according to claim 18, wherein, in the dry dehalogenation method, titanium oxide is heated to 200 to 500°C.

20. A process for producing a titanium oxide according to claim 18, wherein, in the dry dehalogenation method, a steam-containing gas is heated to 200 to 1,000°C, and is brought into contact with titanium oxide.

21. A process for producing a titanium oxide according to claim 20, wherein the steam-containing gas is air containing steam in an amount of at least 0.1 vol.%.

22. A process for producing a titanium oxide according to claim 20, wherein the ratio by mass of the steam to the titanium oxide is at least 0.01.

23. A process for producing a titanium oxide characterized by comprising dehalogenating titanium oxide produced by the method as set forth in any one of claims 11 through 17 above by means of a wet dechlorination method, to thereby yield a slurry containing a titanium oxide.

24. A process for producing a titanium oxide according to claim 23, wherein, in the wet dehalogenation method, titanium oxide is suspended in water, and chlorine which is transferred to a liquid phase is

discharged to the outside of the resultant suspension.

25. A process for producing a titanium oxide according to claim 23 or 24, wherein, in the wet dehalogenation method, separation of chlorine is performed by use of an ultrafiltration membrane.

26. A process for producing a titanium oxide according to claim 23 or 24, wherein, in the wet dehalogenation method, separation of chlorine is performed by use of a reverse osmosis membrane.

27. A process for producing a titanium oxide according to claim 23 or 24, wherein, in the wet dechlorination method, separation of chloride is performed by use of a filter press.

28. A powder characterized by comprising a titanium oxide produced by a method as recited in any one of claims 11 through 27.

29. A slurry characterized by comprising a titanium oxide produced by a method as recited in any one of claims 11 through 27.

30. A composition characterized by comprising a titanium oxide produced by a method as recited in any one of claims 11 through 27.

31. A photocatalytic material characterized by comprising a titanium oxide produced by a method as recited in any one of claims 11 through 27.

32. A material for a wet solar cell characterized by comprising a titanium oxide produced by a method as recited in any one of claims 11 through 27.

33. A dielectric raw material characterized by comprising a titanium oxide produced by a method as recited in any one of claims 11 through 27.

34. A silicone rubber additive characterized by comprising a titanium oxide produced by a method as recited in any one of claims 11 through 27.

35. A titanium oxide characterized in that the rutile content of the titanium oxide is 5% or less, the specific surface area as measured by means of a BET one-

point method of the titanium oxide is 10 to 200 m^2/g, the 90% cumulative mass particle size, measured by a laser diffraction particle size analyzer of the titanium oxide is 2.5 μm or less, and the specific surface area of the titanium oxide as measured by means of a BET one-point method; i.e., B (m^2/g), and the halogen content of the titanium oxide; i.e., C_i (mass ppm), satisfy the following relation: $0 \leqq C_i \leq 650ke^{0.02B}$ wherein k is 0.20.

36. A titanium oxide according to claim 35, wherein the relation $10 < C_i \leqq 650ke^{0.02B}$ wherein k is 0.15, is satisfied.